ENGINEERING NEWS-RECORD

New type of flexible reinforced-concrete mattress for Mississippi River revetment.

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THEY LIGHTED UP A VALLEY

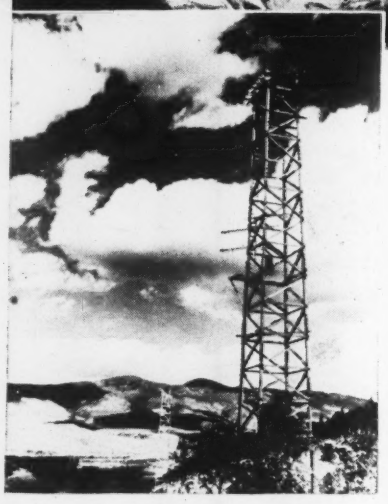
. . . and speeded up a job with safety

● The builders of Green Mountain Dam used a stationary system of lighting to illuminate the entire valley. Thus there was no need to string wires and install lights as construction of this earth-filled dam proceeded.

A day and night working schedule was maintained over the entire construction period of five years. Lighting facilities were independent of the progress of the work, approach roads were adequately illuminated so materials were moved safely and quickly to and over the site, and maintenance expense and expensive delays were minimized.

The Warner Construction Company of Chicago, accomplished this by placing the illumination problem in the hands of G-E lighting specialists, who studied the proposed project and came up with this novel system of illuminating the entire site. Five permanently located batteries comprising a total of 70 enclosed floodlights illuminated an area of 1,000,000 square feet. These G-E floodlights, with polished reflectors and clear glass doors, using 1500-watt, 125-volt Mazda lamps, were mounted on timber towers and poles approximately 300 feet above the foundation of the dam, and 40 feet above the finished crest. They were adjusted only periodically as the dam was brought up. Lights were controlled by a photo-electric cell that turned them on in the evening as natural light intensity dropped.

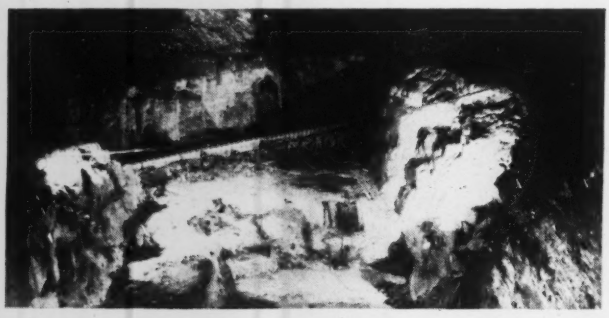
Night view of coffer-dam construction. Light from the five main batteries in the foreground enabled night shifts to accomplish just as much as day shifts.



(Left) Two 80-foot timber towers on the south, or left, abutment of the dam. Approximately 300 feet above the foundation of the dam.

A U.S. Bureau of Reclamation project, Green Mountain Dam is one of the largest earth- and rock-filled dams in the world. Power generated here has helped supply Colorado's war industries. Good lighting was probably one of the important factors in preventing night-shift accidents and delays.

The General Electric Illuminating Laboratory studies outdoor lighting problems of all types, makes illumination tests of equipment, surveys projects for better outdoor illumination, and offers a thoroughly competent service that is always available upon request. General Electric Company, Schenectady 5, New York.



Two small G-E floodlights at the power-house site supplemented over-all lighting that was provided by the main batteries.

Looking down 300 feet to the coffer-dam construction. A battery of 10 G-E floodlights (Type L-68) in foreground.

GENERAL ELECTRIC

655-47-3000

BUY WAR BONDS

The Week In Engineering and Construction

ENGINEERING NEWS-RECORD • SEPTEMBER 13, 1945 • VOLUME 135 • NUMBER 11

President asks release of postwar construction funds

Highway construction, airport rehabilitation, works planning among major recommendations — Message asks formation of valley authorities, public health

Immediate removal of legislative barriers now blocking huge expenditures of federal funds to aid highway and other types of public construction, and legislation further to expand government participation in construction were asked of Congress by President Harry S. Truman last week.

Presenting the opening session of the re-convened Congress with probably the longest Presidential message on record, Mr. Truman also called for the rapid establishment of regional development authorities to develop natural resources of the nation's great river valleys, and asked for additional funds to aid state and local governments in preparing plans for needed public improvements and facilities.

He recommended immediate release of the funds provided for highway improvements in the states, authorized under the Federal Aid Highway Act of 1944 (*ENR* Dec. 21, 1944, p. 787). As originally written, construction funds authorized by the act cannot be released until after formal ending of the war emergency except by a joint resolution of both houses of Congress. Under the act, the federal government would put up $500,000,000 each year for three years beginning at the end of the emergency, these funds to be matched by the states to make a total road construction program totalling about $3,000,000,000 for the three-year period.

Acting on the assumption that swift Congressional action would follow the ending of the war in both major theaters, most states have already announced that their plans are for immediate action under the bill. (*see p. 15 this issue.*)

In another move to encourage construction of "useful public works of the type that must necessarily supplement private construction of homes and industrial facilities," the President urged further appropriations for advances of federal funds to state and local governments to assist them in preparing detailed drawings and specifications for such public works.

Sewers, water supply work

Listed under the heading of needed work in this classification were streets and sewers, water supplies, hospitals, airports, schools, and "other necessary public facilities." Under the independent offices appropriation bill (*ENR* May 10, p. 675) Congress has already allotted $17,500,000 as a fund from which the local governmental units could draw advances for planning. Under the mobilization and reconversion act of 1944 (*ENR* Nov. 30, 1944, p. 667) a total federal appropriation of $76,000,000 was asked for this purpose. The President said that the $17,500,000 granted thus far is "entirely inadequate" and that additional money would be requested.

He added that such projects should be undertaken at present "only where they supplement and encourage private construction," and where the project would not compete with private construction for manpower and materials.

"The majority of state and local governments are awaiting a decision concerning Federal assistance. In order to get needed public facilities started promptly, I recommend that Congress give early consideration to grants for such public works, under conditions that will insure that each level of government . . . shall make its appropriate contribution," he added.

The third major construction recommendation was a call to enact legislation to implement Department of Commerce plans that contemplate construction of 3,000 new airports and improve

(*Continued on p. 2*)

New York urged to spend own funds

New York City should not wait for federal grants to initiate its public works program, in the opinion of Controller Joseph D. McGoldrick. His proposal, which is at variance with Mayor La Guardia's philosophy of waiting for federal aid, was contained in a letter to the mayor, recently made public, indicating that an immediate start could be made on almost $34 million of projects using city funds alone.

Mr. McGoldrick recommended an omnibus amendment to the 1945 capital budget to provide the funds, the approval of which would permit appropriations to be granted on Oct. 4. The projects outlined are said to be those on which plans are virtually complete and for which land acquisitions already have been made, except in one instance.

Starting work now on this "modest" program, argued Mr. McGoldrick, should not prejudice the city's position for obtaining federal funds for the balance of New York City's public works program, which contemplates a total expenditure of $1,250,000,000.

It is the city's responsibility, said the controller, "to do its part to provide jobs when the need is greatest." He felt that it was unlikely that federal aid for public works as outlined in President Truman's message to the Congress could be made available for many months, during which there would be maximum economic dislocation.

The $34 million program on which action is urged includes: Eleven schools or additions to existing schools at a cost of $12,958,700; three health centers costing $282,652; eight hospital projects at $12,254,059; a terminal market at $1,307,921; three playgrounds at $148,400; three police stations at $453,000; three sewage treatment plants at $4,214,800; one sanitation garage at $298,000; and four miscellaneous projects costing $1,872,000.

President asks postwar building funds

(*Continued from first page*)

1,325 existing fields, presented to the last session of Congress (*ENR* May 10, p. 682, and July 12, p. 21.)

In a detailed report the Commerce Department recommended that such a program, contemplating expenditure by the federal government of about $1,250,000,000, should be spread over a period of ten years, the cost to be shared equally between federal and non-federal governmental agencies.

Federal buildings asked

With the all-controlling factor of war necessities removed, the President recommended enactment of legislation authorizing additional construction of certain federal buildings. Such a program, proposed earlier this year, (*ENR*, Feb. 15, p. 227) was to have been spread out under a "timing" bill to act as a stabilizing force in construction.

An additional appropriation of $25,000,000 to continue the construction of the Inter-American Highway through the Central American Republics to the Canal Zone (*ENR* Aug. 2, p. 137 and previously) was also asked.

Citing the beneficial results of federal assistance in the construction of hospitals and health centers throughout the country, the message said that the federal government must "continue to recognize its obligation to maintain and improve the health of the nation" by providing federal grants where necessary for the construction of hospitals and health centers. The President cited assistance provided by the Federal Works Agency and the Public Health Service to local governmental agents and non-profit organization in the construction of such facilities.

Develop river valleys

Cautioning that the nation must proceed "as speedily as possible" to set up and maintain inventories of national wealth and resources and test the suitability of plans and proposals for public works in the light of this purpose, the President suggested establishment of an agency for such a study.

He cited the example of the Tennessee Valley Authority in urging that "carefully considered and extensively debated" programs for regional development of the Columbia River, the Missouri River, the Central Valley of California and the Arkansas River, be provided.

"I hope that the Congress will proceed as rapidly as possible to authorize the development of our river valleys," the President said. "It should be unnecessary to state that the conservation and development of the national plan must proceed according to intelligent and coordinated design." The program of public works must have as its unified purpose the greatest possible contribution to the wealth of the nation."

He urged caution in the preparation of extensive public works programs, in order that such work should not compete with private industry. "Only such public works should now be undertaken as will not compete with the use of materials and manpower by private industry," the message read. "Plans for other public works should be suspended."

A further recommendation called for the development "for the use of industry of new technologies so that the vast deposits of low-grade ores that have not heretofore been considered usable may be put to work.

"Fundamental research" into the basic sciences, public health and allied fields, provision of scholarships and grants for young men and women of proved scientific ability, coordination and control of scientific activities now conducted by the several departments of the federal government, were urged as federal projects.

Engineer generals in re-assignments

Maj. Gen. Francis B. Wilby has been relieved from his assignment as superintendent of the U. S. Military Academy at West Point to become Commanding General of Fort Belvoir, Va., the Engineer School and the ASFTC. He replaces Brig. Gen. Gordon R. Young, who is on detached duty with the War Department General Staff, and is succeeded as superintendent at West Point by Maj. Gen. Maxwell D. Taylor, until recently Commanding General of the 101st Airborne Division.

Generals Wilby and Young are engineers and General Taylor was commissioned a second lieutenant in the Corps of Engineers upon graduation from West Point, but three years later transferred to the Field Artillery.

General Wilby was graduated from West Point and served during both world wars. He holds the Distinguished Service Medal and the Croix de Guerre with palms. Appointed a second lieutenant in the Corps of Engineers in 1905, he first served at Ft. Leavenworth, Kan. Later he served in Cuba and the Philippines. He had a distinguished record in the first World War. From 1924 to 1941, he was a member of the War Department General Staff on river and harbor work on the Mississippi. Later he was a member of the Mississippi River Commission, Division Engineer of the North Atlantic Division, and Chief of Staff of the First Army. In 1942, he became Superintendent of the U. S. Military Academy.

Gen. Wilby

Young on general staff

General Young, born in Philadelphia in 1891, was graduated from West Point and appointed a second lieutenant, Corps of Engineers, in 1913. He was promoted in due course, becoming a brigadier general (temporary) on Sept. 9, 1942.

He sailed for France with the 2nd Engineers in October, 1917, and served as Assistant to the Chief Engineer of Divisional Area A.E.F. until November, 1917. He served with the General staff of the A.E.F. until May, 1919. After various engineering assignments, in September, 1942, he became Engineer Officer of the Panama Canal Department. In 1944 he became Commandant of the Engineer School, at Fort Belvoir. In July of this year he was assigned to the office of the Assistant Chief of Staff, Operations Division, War Department General Staff.

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Nominate Lt. Gen. Wheeler to succeed Lt. Gen. Reybold as Chief of Engineers

Commander of India-Burma theatre also started our activities in the Middle East; President also names Maj. Gen. R. W. Crawford as president of Mississippi River Commission.

Lt. Gen. Raymond A. Wheeler, Commander of the India-Burma war theater since July, 1945, and Deputy Supreme Commander of the Southeast Asia Command, has been nominated by President Harry S. Truman for the post of Chief of Army Engineers.

According to the President's transmittal message, Gen. Wheeler, who holds permanent rank as a major general, will retain his lieutenant generalcy during his tenure of office.

In the same message, Maj. Gen. Robert W. Crawford was nominated as President of the Mississippi River commission, succeeding Brig. Gen. Max C. Tyler.

Lt. Gen. Eugene Reybold, head of the Engineer Corps during its huge wartime development, has announced his retirement effective September 30. On that date he will have completed a four-year term in the office. Gen. Reybold assumed command of the Corps, succeeding Maj. Gen. Julian L. Schley, on Oct. 1, 1941, and received promotion to the rank of lieutenant general in July, 1945.

First Chief of Engineers to hold the office without a West Point background, Gen. Reybold graduated from Delaware College, and transferred to the Corps in 1926, after attending the Army War College and Command and General Staff schools. He supervised extensive rivers and harbors work before being assigned to Washington in 1940 as Assistant Chief of Staff for G-4 (Supply).

Gen. Reybold last week had announced no definite plans for the future.

Gen. Tyler reached the statutory retirement age last September, and his appointment as head of the Mississippi River commission ended at the same time. However, he was retained in active status until the end of this month.

Wheeler holds DSM

Gen. Wheeler, 60, three-time holder of the Distinguished Service Medal, assumed command of the India-Burma theatre in July (*ENR, July* 19, *p.* 70), and continued as Deputy Supreme Commander and principal administrative officer of the Southeast Asia Command.

A native of Peoria, Ill., Gen. Wheeler was graduated from West Point in 1911, with a commission in the Corps of Engineers. He was regimental commander of the 4th Engineers in France during World War I, with a temporary rank of colonel. Later he became an instructor at Fort Benning Infantry School, served a four-year tour as assistant engineer commissioner of the District of Columbia; assistant engineer of maintenance for the Panama Canal; district engineer at Wilmington, N. C. and Rock Island, Ill. After graduation from the Army War College in 1937, he became resident member of the Board of Engineers, Washington, D. C.

He was promoted to brigadier-general in September, 1941, and assigned to the Office of Chief of Staff in Washington. Late in 1941 he went overseas with a military mission charged with developing a supply line to Russia through the Persian Gulf, and was subsequently promoted to major general and assigned as commanding general, S.O.S., in the China-Burma-India theater. He held this command from March, 1942 to November, 1943, when he became principal administrative officer of the then newly formed Southeast Asia Command. He became deputy supreme commander under Lord Louis Mountbatten in November, 1944.

Gen. Crawford, 54, is a native of Warsaw, N. Y., and graduated from West Point as a second lieutenant, Corps of Engineers, in 1914. Holding the temporary rank of major, he sailed for France in August, 1917, serving with the 1st Engineers there. In September, 1917, he joined the Chemical Warfare Service of the AEF and two months later was assigned as supply officer to the Chemical Warfare Service, with the temporary rank of lieutenant-colonel.

Gen. Crawford

After service in the New York office of the U. S. E. D. he later was assigned to the Office of the Chief of Engineers for four years, and followed this with a tour as district engineer at Duluth, Minn., between August, 1925 and August, 1928. In 1929, after graduation from the Command and General Staff School, he was assigned to Honolulu, Hawaii, as district engineer.

Other duties included instructor at the Engineer School, Fort Humphreys, Va.; chief of the Construction Section, Office of the Chief of Engineers.

In December, 1942, General Crawford was assigned to the Middle East as commanding general, Service of Supply, for the United States Army Forces. He served in this capacity until June, 1943, when he was sent to England as deputy commander S. O. S., European theatre of operations. He became assistant chief of staff, G-4, Supreme Headquarters, AEF in the European theater, in March, 1944.

Lt. Gen. Eugene Reybold

Closing a long Army career, after a four-year tenure as head of the Corps of Engineers. He saw his organization grow to huge proportions, supervised its heavy and spectacular wartime job.

Lt. Gen. R. A. Wheeler

Former commanding officer of the India-Burma war theater, and an engineer with a long record of Army achievement, named by President Truman to become head of the Corps of Engineers.

Much armed forces construction machinery will be sold as surplus

Army has already released $72,000,000 worth and much more will be turned over by military agencies—Used equipment to be sold by spot sale methods, new units go to dealers at fixed prices.

During the next few weeks a great deal of new and used construction equipment and tons of spare parts are expected to be turned over by the Army and Navy to the office of surplus property for disposal, according to R. H. Chiles, acting chief of the Machinery Division of that agency. Because of the poor condition of most contractor's equipment, and the large volume of construction expected in the next few years, no flooding of the machinery market with 'give away' prices is expected to result.

The War Department has announced plans to release to the office of surplus property about $72,000,000 worth of construction machinery. Of this amount about 80 percent is expected to be new units. It includes several hundred cranes, tractors, shovels and drag-lines, and considerable concrete and bituminous paving equipment.

Much additional equipment should be forthcoming from the services once the size of occupation forces has been determined. However, general view taken in Washington is that only a few units will be returned from the Pacific. Therefore, most of the equipment to be sold will be new machines that were awaiting shipment to the east when the war ended, units used for training purposes, and equipment already returned from Europe as part of the redeployment of troops to the Pacific.

In about a month figures on the actual amount to be disposed of by the Office of Surplus Property should be pretty well known. Now only rough estimates are possible. However, surplus property officials are confident that if the military departments were to dispose of all of their equipment, no great impact on the price of construction machinery would result. Reduction in price of the types of equipment where the largest number of units were to be sold might, of course, occur.

Government agencies get first chance

Federal regulations governing the disposal of surplus equipment dictate that the various federal agencies be given first chance to purchase the property. State and local government units must also be given opportunity to buy the material before it is sold to the public. Nevertheless, the Office of Surplus Property during recent months disposed of some 50,000 units of construction machinery, of which about 95 percent was used units, with the federal and local agencies buying only small amounts.

To dispose of the used equipment not purchased by government agencies, the Office of Surplus Property plans to continue the "on-the-spot" sales method employed the past months, described in detail in *Engineering News-Record* March 22, vol. p. 393. By this procedure ample time is allowed for inspection of the item offered and all are plainly marked with key numbers corresponding to the candid descriptions in the sale list. Then, after the legitimate bidders, which are generally restricted to equipment dealers, are registered, bidding is done by cards. With this method a bidder lists on the card the sales item number, the price bid and his name, address and registration number. Highest bidder is sold the unit; only exception being where the bid price is extremely low or in case of tie bids.

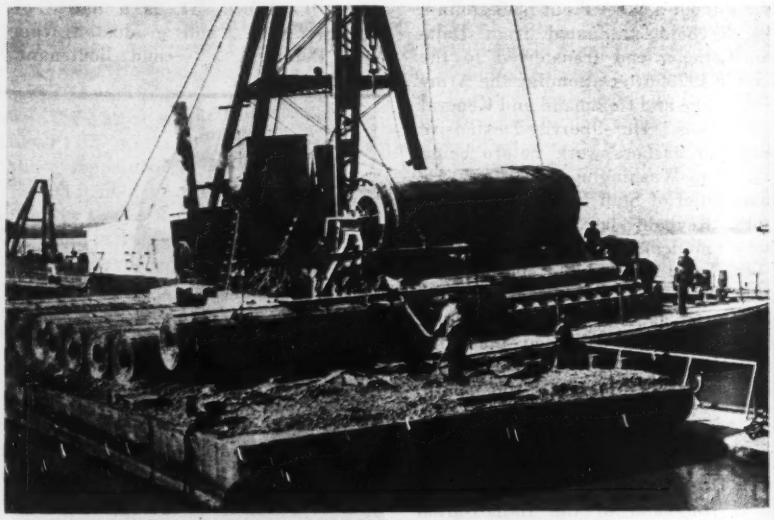
During the next few months the Office of Surplus Property will hold a number of sales of used equipment. These sales are to be conducted by the various regional offices in accordance with a set schedule. It is to be noted that the offices of region 3, 4 and 5 will hold no sales in September, but will follow with sales in October.

Detailed information as to a given sales can be obtained by applying to the proper regional office.

New units sold by fixed prices

Disposal of the new equipment and parts will be by a different method. In this work, conferences will be held by disposal officials and manufacturers' representatives to fix prices for the new units to be sold. General plan will be to dispose of new equipment in large lots through regular distribution channels or by sale to established equipment distributors at the fixed prices agreed upon.

The dealer, in turn, will add a reasonable carrying charge and dispose of the equipment to contractors and other purchasers. Such a method is expected to result in the least interruption to normal sales and to give all purchasers a chance to buy in accordance with former satisfactory methods. Because of the time expected to be required to establish the fixed sale prices to the dealers, a delay of a few weeks may occur before a large amount of the surplus of new equipment is placed on the market.



Flexible concrete mat for river revetment

A new type of mattress of reinforced concrete has been developed by U. S. Army Engineers for revetment work on the Mississippi River. The mat is cast 1⅛ in. thick and in sections 24 ft. wide by 60 ft. long. First installation of this type of bank protection was recently completed at Miller Bend, near Greenville, Miss.

The mat is designed sufficiently flexible to permit its being rolled on to a large tinker core at the casting plant, transported by barge to the revetment site, rerolled on to a big steel drum, and unrolled down the river bank, as shown in the above illustration.

Other important features and methods of installation on the Miller Bend project will be described in an article scheduled for the Sept. 20 issue.

Central Valley development confused by duplicate construction planning

Engineer Corps and Reclamation Bureau announce plans for development of California water resources that are found to be virtually duplicates—Congress decision may be required

Plans for future development of California's rich Central Valley Basin were confused last week when it appeared that two federal agencies were planning to provide the territory with the same multi-million dollar projects.

Close on the heels of a Corps of Engineers announcement that it had begun exploratory work on at least four authorized Central Valley dams, (ENR, Sept. 6, Vol. p. 279) the Sacramento office of the Bureau of Reclamation made public its program for immediate and ultimate development of the area.

Perplexing to water-conscious Californians was the fact that both the Corps and Bureau plans were almost identical, project by project. Encouraging to some was the agreement that specific dams and related facilities are vitally needed, but many feared long delays in harnessing resources with a battle over appropriations in sight.

Denying any conflict between the two federal agencies as to their respective roles or development plans, Sacramento offices of both the Corps and the Bureau reported cooperation in planning the Central Valley Basin's future, but did not deny there might be some "policy" issues to be settled by Congress.

The bureau plan of coordinated and multiple-purpose dams, reservoirs, canals, power plants and other works, completed in Sacramento and sent to the Department of The Interior for approval, involves an immediatae 15-year, $527,310,000 program of works that would add 1,000,000 acres to irrigated areas of Sacramento and San Joaquin valleys. In addition, initial features of the Central Valley Project, now under construction, would be completed at a cost of $208,000,000.

In its plan for ultimate development of the Central Valley, the Bureau envisions works designed to make available practically all waters of the Central Valley Basin, raising total costs of projects to $1,800,000,000.

Meanwhile, a legislative jump ahead of the Bureau, the Engineers continued exploratory work at sites of Folsom Dam on American River, Isabella on Kern River and Pine Flat on Kings River under authorization contained in 1944 flood control act and a $1,700,000 planning appropriation. Other major projects contained in both plans, but which the Engineers already have been authorized to construct, include Terminus reservoir on Kaweah River, Success reservoir on Tule, and projects on the Stanislaus and Calaveras rivers.

Washington must decide

Voluntarily attempting to "clear the air and reduce public confusion" on the future of the basin, local offices of the Corps and the Bureau last Saturday brought out facts from which it was plain that Washington must decide the future.

Appearing before a meeting sponsored by the Central Valley Project conference and the California Farmer-Labor-Consumer Assn., Col. Lester F. Rhodes, district engineer, Sacramento U. S. Engineer Office, and R. S. Calland, acting regional director at Sacramento for the Bureau of Reclamation, discussed purposes and interests of their groups in the Central Valley.

Said Col. Rhodes: "Physical location and ultimate capacity of reservoir units...were selected after careful and joint consideration. As a result... conservation storage for irrigation, power and other purposes was provided in such reservoirs to the maximum extent feasible where found to be economically warranted.

On the other hand, Mr. Calland said in reviewing units of the Central Valley Project already completed in the area: "In planning and building these works we did not subscribe to the philosophy of 'get the water first and then decide what to do with it.' From the beginning we knew where this water was going and who would benefit from it."

• • •

Pennsylvania plants must control wastes

One hundred and one industrial plants throughout Pennsylvania have been ordered to draft plans to control industrial waste.

Dr. Harry W. Weest, new State Secretary of Health and chairman of the State Sanitary Water Board, disclosed this shortly after taking office.

Governor Martin singled out stream pollution abatement as one of two operations of the department to get special attention and told Dr. Weest he would have a free hand in directing the State's clean streams campaign.

Dr. Weest pledged his full cooperation. Until recently he was a colonel in the Army and chief surgeon of the 28th Division.

The State Sanitary Water Board has already ordered more than 400 municipalities to file plans for sewage treatment by December 31 of this year.

Move entire units as housing jam solution

Seeking swift, if temporary, solutions to pressing housing problems, federal agencies this week were moving at least two housing projects bodily to new locations.

At Windham, Ohio, several hundred new but unused housing units built for the Maple Grove federal housing project are to be moved about 120 miles to Ohio State University at Columbus, for use of servicemen with families. This is the second time that a part of these houses has been moved elsewhere, since earlier in the year the FHA contracted to transport housing units to Ferndale, Mich. (*ENR*, May 3 ,col. p. 627).

The Windham project originally contained 2,000 units, but highest occupancy was 433 units.

Once located at the university, these houses will be rented to servicemen at $25 per month including all facilities, if the units are rented unfurnished, or $31 a month for five rooms with furnishings.

An Vanport, Ore., where one of the country's largest housing projects was built, 66 of 700 apartment housing units have been cut up and are being trucked nearly 200 miles to Bremerton, Wash., to relieve an acute housing shortage at the Navy Yard there.

Units are prepared for the 10 to 12-hour trip by removing roofs, taking off top stories in panels and cutting lower stories into nine sections.

Meanwhile, looking toward a more permanent solution of the housing problem, the National Housing Agency in Detroit announced that a 1410-unit temporary war housing project previously programmed for the Detroit area will not be built; but that the agency has authorized two permanent low-rent projects, previously deferred because of the war.

The two projects will provide permanent housing totaling 2,410 units. The projects are Douglas Homes, with original plans for 706 units on the east side, and Jeffries Homes, originally planned for 1704 units on the west side. More than one-fourth of the 2,410 units will be available for Negro occupancy.

MEN AND JOBS

Neil D. Hyde, formerly assistant to the chief engineer, New York Central System, has been named assistant to vice president, succeding George H. Harris who retired Aug. 1. **Arthur P. Button,** designing engineer, has been promoted to assistant chief engineer, and **Harold F. Whitehead** was promoted from assistant designing engineer to designing engineer, according to F. J. Jerome, chief engineer.

Neil D. Hyde

Mr. Harris, 67, has been with the New York Central System for 42 years. He was graduated from the University of Michigan in 1902, becoming chief engineer of the Michigan Central in Detroit in 1931. He was transferred to Chicago in 1939 as chief engineer for the Michigan Central and the New York Central line west of Buffalo, N. Y., and was appointed assistant to vice president in 1943.

A. P. Button

Mr. Hyde was graduated from Union College, Schenectady, N. Y., in 1911 and started working for the New York Central the following year. Mr. Button and Mr. Whitehead also are veterans in the New York Central's engineering department, both having started in 1909. Mr. Button was educated at Rensselaer Polytechnic Institute and Mr. Whitehead studied engineering at the Polytechnic Institute of Brooklyn, N. Y.

Clarke K. Harvey, chief office engineer, Allegheny County, Pa., Department of Works, has become planning technician for the Allegheny Conference on Community Development. He has been an engineer in the county works department for 21 years, serving as assistant engineer, bridge maintenance and design engineer and chief office engineer, and supervised construction of the Sixth, Seventh, and Ninth Street bridges connecting downtown Pittsburgh with the North Side.

Clarence B. Shain of Olympia, Wash., has been appointed Washington state supervisor of hydraulics, succeeding **Charles J. Bartholet,** who remains as office engineer. Mr. Shain formerly was Thurston County engineer at Olympia and city engineer for Centralia.

Maj. Carl A. Anderson, chief of the engineering division, Seattle district U. S. Army Engineers, has been transferred overseas. **Maj. Grant P. Gordon** succeeds him while **Maj. Leonard W. Bindon** takes Major Gordon's former post as chief of operations for the Seattle district. Major Anderson was graduated from Oregon State College in 1930, served as a civilian engineer at Bonneville Dam for the Portland, Ore., engineer district from 1934 to 1941, and has been with the Seattle district since 1941. Major Gordon, after studying at the College of Idaho and Stanford University, was with the Bureau of Reclamation at Grand Coulee Dam from 1933 to 1940.

Willard F. Day has been made supervisor for Montgomery Co., Md. He had been engaged by the National Defense Advisory Committee on the construction of military posts in several states.

Previous to that Mr. Day had been manager of Henrico County, Va., and city manager and engineer of Staunton, Va. He also had worked for the Standard Oil Co. of N. J. and had been resident engineer for the highway commission of Virginia and inspector of construction with the Maryland State Roads Commission.

Mr. Day is a past president of the International City Manager's Association.

W. K. Chantry, Marengo, Iowa, has resigned as county engineer of Iowa County. **Thomas E. Riley,** of Ottumwa, employed in his place, has been engineer for Wapello County.

Murphy Canady, Tarboro, N. C., has been appointed senior sanitarian of the district health department embracing Orange, Person and Chatham counties, with headquarters at Chapel Hill, succeeding **Ford P. Brendle,** who resigned recently to become sanitary engineer for a Charlotte, N. C. dairy.

Appointment of **C. A. Willson** as chief of the non-metallic building materials section of the War Production Board's Building Materials Division has been announced.

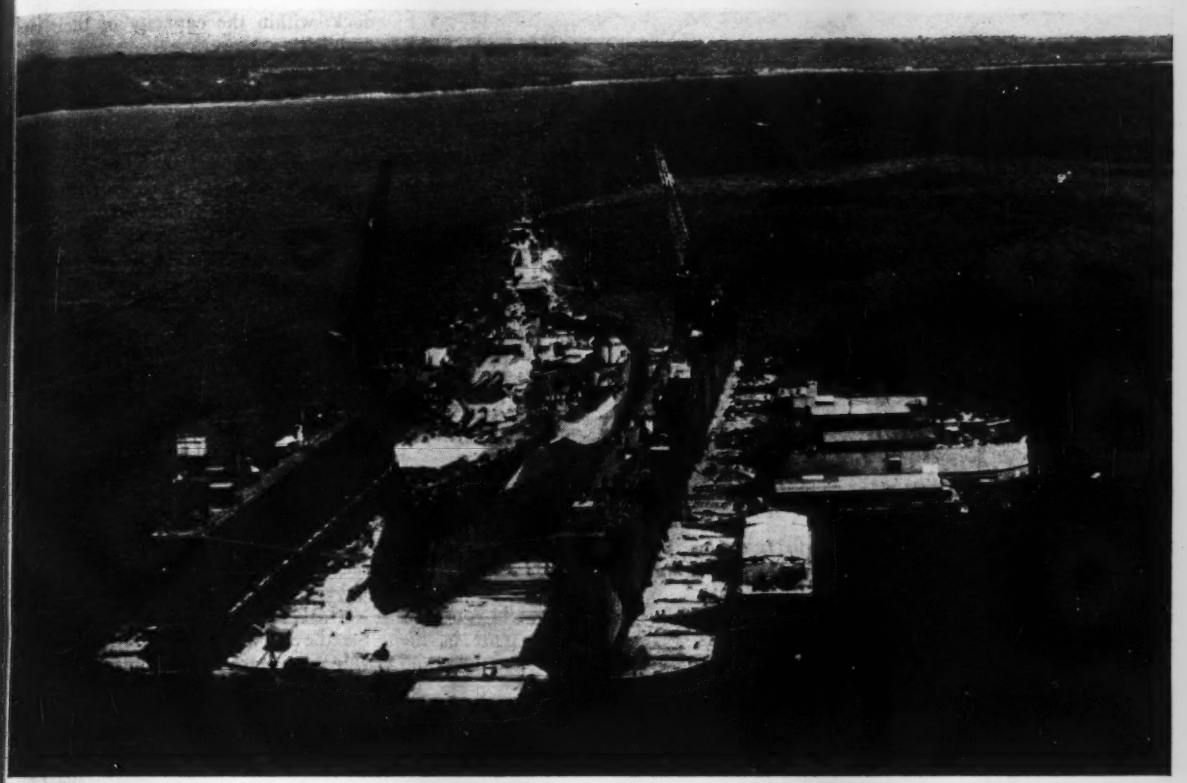
Mr. Willson was formerly chief of the clay and concrete products section, now merged with the non-metallics section. He joined WPB in April, 1942, as a member of the conservation division and has been chief of the clay and concrete products section since July, 1944.

Prior to entering government service, Mr. Willson was structural engineer in the Wisconsin state architect's office for 19 years.

William D. McIlvaine, Jr., has joined the staff of the American Public Works Association as assistant director. A graduate of the University of Minnesota, Mr. McIlvaine also took his master's degree there. He has been engaged since 1933 by the Minneapolis-St. Paul Sanitary District, his last position there being assistant engineer and acting mechanical engineer in charge of engineering and maintenance.

Previous to that he was employed by the University of Minnesota and the Minnesota State Highway Department. Mr. McIlvaine will work for sound public works programs and practices in line with the purposes of the association.

Herbert D. Fritz, associate director of the American Public Works Association, has accepted appointment as city manager of Grand Junction, Colo. Before joining the Chicago headquarters staff of APWA early in 1942, Mr. Fritz served local, state and federal agencies in administrative and technical capacities at Bettendorf and Burlington, Iowa; Urbana, Ill.; Canton, Mo., and Omaha, Neb. He is a graduate in civil engineering from Iowa State College.



A ten-section drydock services a U. S. battleship somewhere in the Pacific.

Floating Drydocks—Battleship Size

This picture story supplements and completes the series of articles "Floating Drydocks of the U. S. Navy" that appeared in Engineering News-Record, issues of March 8, March 22, and April 5.

Floating drydocks mobile enough to be taken anywhere in the world yet large enough to lift any ship afloat or contemplated have proved to be one of the most essential elements in the success of the war in the Pacific. The units built for this service are in sections, of a size that can pass through the Panama Canal. They have wingwalls that can be laid down to reduce wind resistance so they are easily towed by a single cargo ship or a tug.

There are two sizes of the big sectional drydocks, *i.e.*, a unit dock with a lifting capacity of 100,000 long tons, made up of ten individual sections and a unit dock with a capacity of 56,000 tons, assembled from seven sections. Neither battleships nor cruisers now contemplated are as heavy as the full capacity of these drydocks but concentrated loads from fighting ships require provision for exerting powerful lifting forces under short lengths of the vessels.

The sections of the larger docks are each 80 x 256 ft. and the ten units, put together with 3 ft. between them, have a length of 827 ft. Additional workroom is provided by a 50 ft. movable outrigger platform at each end, which makes an overall length of 927 ft. The smaller size drydock sections are each 101 x 240 ft. and seven sections have a total length of 725 ft., 825 ft. over outriggers. An eighth section is being provided for the smaller docks, which will better enable them to handle larger units in a damaged condition.

Individual sections of the drydocks are almost as completely equipped as a ship except that they are not self propelled. Sections are built separately in basins or on ways as convenient and towed separately to a point of assembly. A few weeks are required to assemble the big drydocks as wingwalls must be raised (done by jacking to raise the 425-ton sidewalls to the vertical), cranes shifted from the pontoon deck to the top of the wingwalls and the several sections welded into a single vessel.

This large sectional drydock for advance base use had its inception during the summer of 1940 when Vice Admiral B. Moreell (CEC), USN, Chief, Bureau

PERSONNEL IN CHARGE FOR THE BUREAU OF YARDS AND DOCKS

Vice Admr. B. Moreell, Chief of Bureau
Rear Admr. L. B. Combs, Assistant Chief
Rear Admr. J. J. Manning, Head of Fleet Facilities Division—later Director of the Construction Department
Rear Admr. C. A. Trexel, Design Manager
Rear Admr. W. H. Smith, Director of Planning and Design Department
Capt. E. H. Praeger, Design Manager
Capt. Kirby Smith, Head of Fleet Facilities Division—later Director of the Construction Dept.
Capt. W. L. Richards, Fleet Facilities
Comdr. J. T. Reside, Dry Dock Section—in immediate charge of all details of the development.

Sections of floating drydocks were built in basins, partly above tide level and "locked-out" by filling the basin with water. (ENR March 22, 1945, vol. p. 390.)

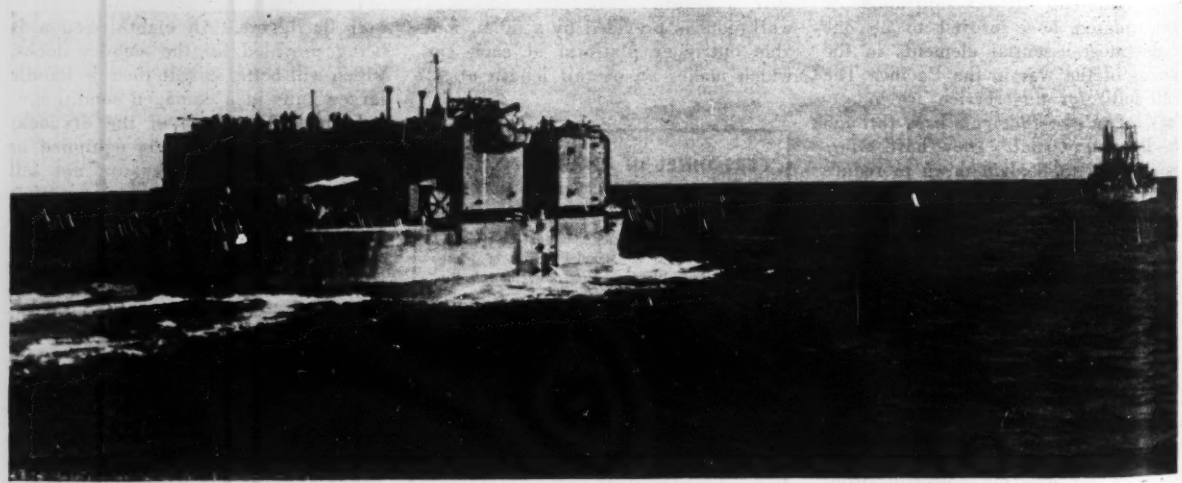
of Yards and Docks, decided that in view of its many advantages, consideration should be given to the development of a satisfactory type of sectional dock to replace a one-piece floating drydock for battleships and other large units previously designed, but never built. The one-piece floating drydock had several disadvantages—it had to be built in a basin, which would take a long time to construct and would be quite expensive; it had to be built on the West Coast since it could not traverse the Panama Canal; it resulted in a "lot of eggs being placed in one basket," that is, the dock, if damaged by bombing or torpedo attack would probably be unusable or have its usefulness greatly impaired; and it would probably be quite unwieldly and difficult to manage in a seaway. Also the dock's own resisting moment when at sea was a very serious factor in the design making for greater weight and cost.

The sectional dock, on the other hand, can be built simultaneously at several locations (East Coast, West Coast, Gulf Coast, and even on inland waters). The sections can be built at several plants utilizing building basins or small building ways, thus making for maximum speed of construction. The sections can easily traverse the Panama Canal and they have the further advantage that although there are as many as ten sections in a complete dock, the loss of one or more of the sections would not be disastrous in the sense that even if only several sections arrived at their destination they could be assembled and used as a floating drydock, within the capacity of their size and lifting power.

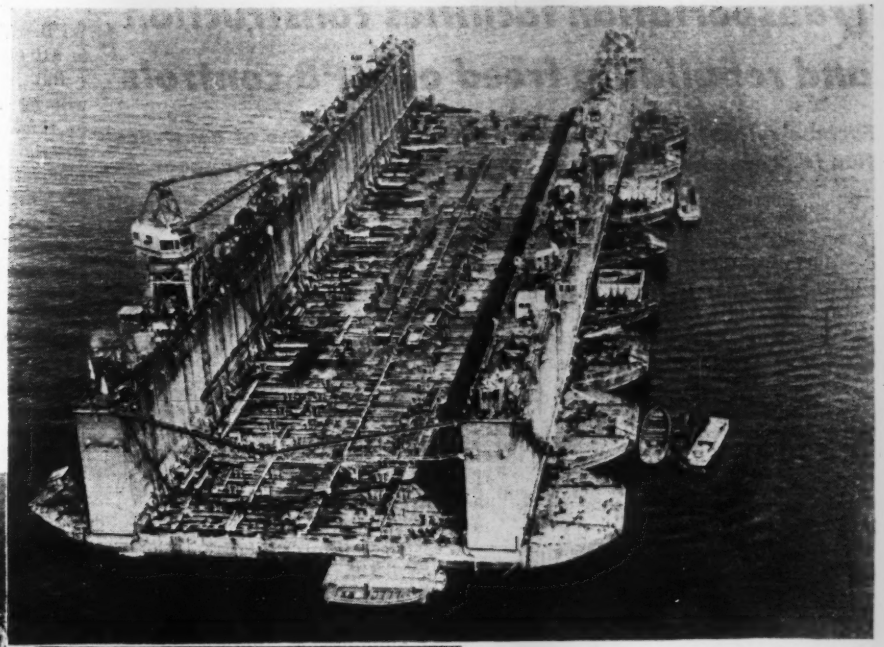
The sectional type of floating drydock for advance base use had been proposed from time to time over a period of years, and had been studied prior to 1940 under Vice Admiral's Moreell's general direction. However, there were two principal difficulties to overcome. First, the Bureau of Construction and Repair (now Bureau of Ships) had required that the longitudinal strength of the floating drydock be based on the assumption that the ship to be docked therein had no girder strength. The other principal difficulty anticipated was that if the sections of the drydock were towed with the wingwall in an upright position the sail area thus presented would be so great as to make the section very difficult to handle in a high wind.

To obviate the difficulties mentioned the Bureau of Yards and Docks and the Bureau of Construction and Repair worked together to achieve a design for the sectional dock that would provide a reasonable minimum longitudinal resisting moment, the balance of the moment involved to be carried by the frame of the ship being docked. To eliminate the difficulty of the "sail area" of the high wingwall, the Chief of the Bureau of Yards and Docks advanced the proposal that a side wall be devised that could be quickly raised and lowered, such side walls to be connected by welded plates that could be burned apart when occasion required disassembly of the dock.

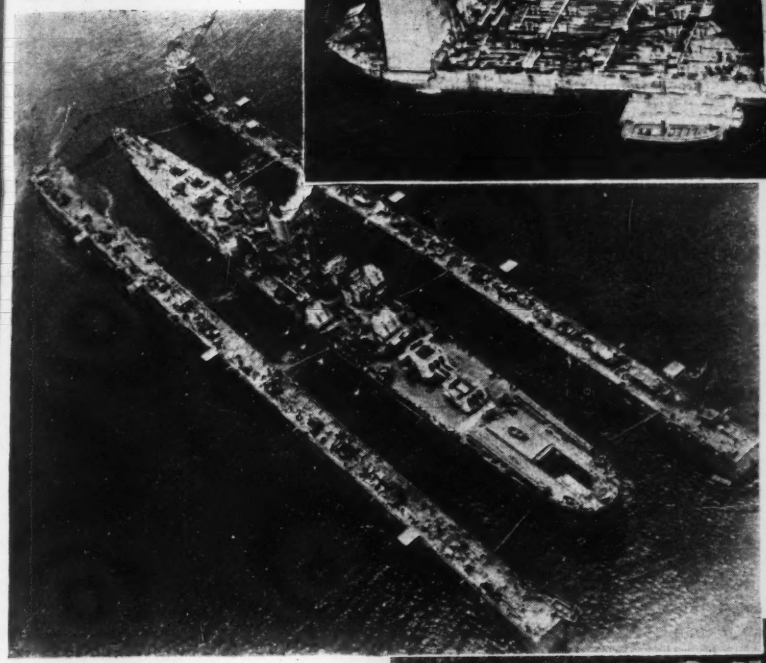
Because of the tremendous work load in the Bureau of Yards and Docks and the availability of an outstanding engineering firm experienced in the design of floating drydocks, the development of the details of this new type sectional



Sections of floating drydocks are towed at speeds of 10 mph. by a Liberty ship, which also carries a load of supplies for establishment of a new base.

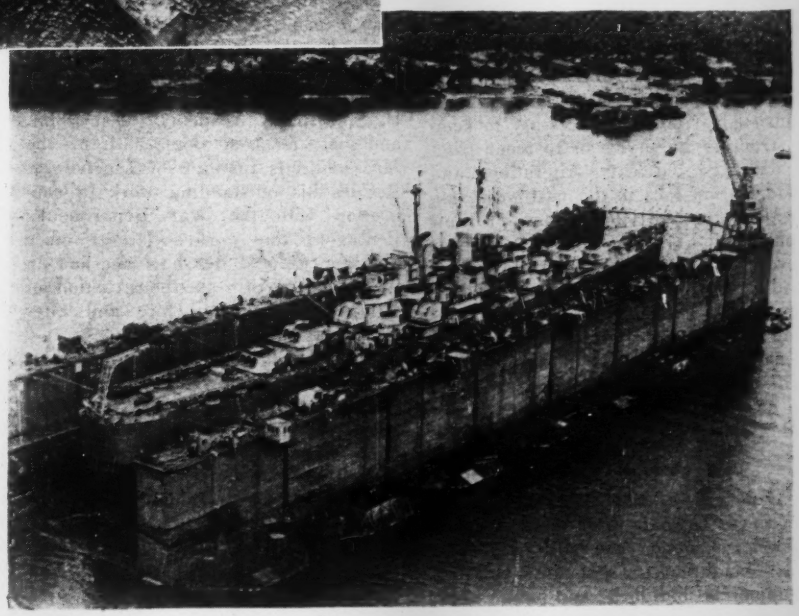


A cruiser (below) of the Pacific fleet floats into the submerged drydock and is carefully centered over the prepared support blocking.



Drydock above is shown in raised position with keel and bilge blocks set to accommodate a ship.

Water is pumped out of the bottom pontoons and wingwall compartments to raise the warship out of the water for examination and repair.



dock was entrusted to F. R. Harris, Inc., of New York City, under general supervision of the Bureau of Yards and Docks. The overall development of the new type unit was handled by the Bureau of Yards and Docks itself, in consultation with the Bureau of Construction and Repair with respect to operating features. For the consulting firm, Frederic R. Harris, a former Chief of the Bureau of Yards and Docks, personally directed the work.

Construction of the big sectional floating drydocks was done by Chicago Bridge and Iron Co. at Morgan City, La., and Eureka, Calif., Everett Pacific Co. at Everett, Washington, Pacific Bridge Co. at Alameda, Calif., Pittsburgh-Des Moines Steel Co. at Pittsburgh (Neville Island) Penna., and Pollock-Stockton Shipbuilding Co. at Stockton, Calif.

Transportation facilities construction and rebuilding freed of WPB controls

Further relaxation of order L-41 permits both types of construction to proceed regardless of cost—All controls may disappear

As another major step in the removal of government controls on construction, the War Production Board on Sept. 6 modified order L-41 to permit the construction of transportation facilities to proceed without WPB authorization regardless of the cost. At the same time L-41 was relaxed to remove all WPB restrictions on repair, alteration and reconstruction work not involving exterior additions.

The move is part of plans to remove L-41 and other construction controls as quickly as possible. On Aug. 21 the WPB eliminated all controls on industrial construction projects by issuing Direction 7 to order L-41 (*ENR* Aug. 23, vol. p. 213). The restrictions on public highway and street work were removed last week (*ENR* Sept. 6, vol. p. 275), and government limitations on construction of electric, gas, water and wire communication facilities will disappear Sept. 30 (*ENR* Aug. 30, vol. p. 261).

Transportation facilities now permitted to go ahead free of WPB controls include: Airports and airway facilities; railroad tracks, stations and repair shops; bus and truck terminals; and oil and gas pipelines. This work is considered to include terminals and loading and unloading facilities. The new relaxation also frees all railroad bridge construction of the controls; highway bridge work is allowed to go ahead by the elimination of the controls on highway projects.

Formerly the only alteration, repair and reconstruction work of large cost permitted without WPB authorization consisted of projects necessary to keep a structure in service or to reconstruct a damaged building. Alterations and modification jobs in the past were subject to the cost limitations on new construction. Thus, the old controls severely restricted the amount of repair and rebuilding work that could be done on homes, hotels, apartment buildings and commercial establishments. All reconstruction work is now permitted without WPB authorization regardless of cost, provided that no major exterior additions are planned.

Few controls now remain

Order L-41 has been so greatly modified that only three major types of new construction are still subject to cost limitations. These are: Housing, commercial buildings, and public works construction other than transportation, utility and highway and street construction.

The remaining cost ceilings on unauthorized housing work vary from $1,000 for a one-family home to $5,000 for a five-family dwelling. These ceilings practically eliminate any unauthorized housing, but builders wishing to spend more than these amounts may obtain approval through the National Housing Agency. (Many months ago the NHA was delegated by the WPB to control housing construction.)

A cost ceiling of $5,000 remains on unauthorized hotel and apartment projects, as does a $5,000 limit on office, bank, laundry and most types of commercial building not approved by the WPB. The limitation is $10,000 for unauthrized church, hospital, and college building projects, and USO clubs. Construction of public buildings such as post offices, city halls, and hospitals is restricted, unless approved by the WPB, by ceilings varying from $5,000 to $10,000.

But indications are that order L-41 will be eliminated in the near future, to remove all WPB controls on construction. The big delay in its complete removal is caused by the necessity of preventing inflationary prices of building materials. However, in the next few weeks most building supplies, including lumber, are expected to be available in adequate supply (*ENR* Aug. 30, vol. p. 259).

To collect, correlate and disseminate information relative to research on highways and highway transportation, the Highway Research Board of the National Research Council has announced formation of a highway research correlation service.

An announcement noted that the major highway improvement and construction work planned by all governmental units in the country will make imperative a central point for collecting and disseminating research data.

The correlation service will be under immediate charge of Fred Burggraf, associate director, with supervision by Roy W. Crum, director.

Col. Renshaw now heads N.Y.U.S. Engineer Office

Col. Clarence Renshaw, recently awarded the Legion of Merit for his work in directing the design and construction of the Pentagon Building in Washington, (*ENR* Sept. 6 vol. p. 280) has been made district engineer at New York of the U. S. Engineer Department following a tour of duty in the same capacity at Philadelphia. He replaces Col. Edgar W. Garbisch, now on leave.

Col. Renshaw is a graduate of the U. S. Military Academy, West Point, and has received degrees from the Massachusetts Institute of Technology. Besides his outstanding work in connection with the War Department's Pentagon, the world's largest office building, Colonel Renshaw also had an important part in the construction of Army cantonments before and after Pearl Harbor.

Colonel Garbisch, whose new post the Army has not yet announced, has been district engineer in New York since April, 1944. He was graduated from West Point 17th in a class of 242. He served for a time at Ft. Humphreys, Va., now Ft. Belvoir, before resigning to begin a business career. He returned to active duty in the Corps of Engineers shortly after the war started.

Skyscraper to be added to Rockefeller Center

An addition to the present structures composing Rockefeller Center in the heart of New York City, a 33-story building, with a frontage of 100 ft. on 51st St. and 274 ft. on 52nd St., near Fifth Ave., will be erected at an estimated cost of $6,000,000. Sixteen 4-story and 5-story houses are being razed to make way for the skyscraper.

To be known as the Esso Building, the structure will be occupied above the second floor exclusively by the Standard Oil Co. of New Jersey.

Exterior of the edifice will be faced with limestone. T-shaped in plan, the building will have a central tower 90 ft. wide and about 127 ft. deep, rising without setbacks from the second floor level of the 51st St. side and from the tenth floor setback on 52nd St. to a height of 424 ft. Landscaped roof gardens will extend along both streets at the second floor level.

There will be interior loading and garage facilities for tenants, conforming with new zoning rules governing building occupying 100 percent of the ground site. The structure will be fully air conditioned.

Architects for the building are Carson & Lundin, with Wallace K. Harrison as consultant. John W. Harris Associates are the general contractors.

Manufacturers announce big new building plans

Getting plans for expansion of existing production facilities rapidly under way, two major manufacturers last week announced plans for expansion building programs to exceed $67,000,000.

The Johns-Manville Corp. announced a 5- to 7-year expansion program to cost $40,000,000. Construction under this program has already started with preliminary work on a $2,000,000 unit in the company's new research center to be built in Bound Brook, N. J. The new structure, one of six to be erected on a 93-acre plot, is expected to be under roof by the end of 1945. It will be a combination laboratory-manufacturing unit in which teams of scientists and production men can easily translate the results of pure research into actual production. Shreve, Lamb & Harmon are architects for the research center project, with the initial structure under contract with Turner Construction Co., New York.

At Detroit, General Motors Corp. announced it had obtained WPB approval for construction in Ohio of about $27,000,000 of new buildings for automobile parts production and assembly.

Included in the production and assembly plants are:

Cleveland—one-story steel frame and brick addition to Fisher Body plant, at $188,689; Norwood, Ohio—automobile plant for Chevrolet, cost $2,533,839; Columbus—one-story factory and two-story office building, about $8,000,000; Hamilton—buildings for automobile body stamps, $2,016,000; Elyria—two-story office building with one-story factory to house the Brown-Lipe-Chapin division, estimated at $3,242,800.

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K. C. plans expansion of airport facilities

Planning expansion and modernization of facilities at five airports under its jurisdiction, Kansas City, Mo., last week announced plans for an improvement program that will cost $8,013,000.

The program will require five years to complete, it is estimated.

According to L. P. Cookingham, city manager, improvements would include: increasing the area of the municipal air terminal and improving parking space, taxi-ways and ramps; additional fire protection; field drainage system; sewer pumps; and purchase of privately owned buildings and facilities.

Other improvements totalling about $890.000 at the Kansas City-Grand View Airport are planned.

H. W. Richardson . . .

Enroute to Japan

Okinawa, 30 Aug. 1945

Dear Staff:

Ever since I arrived here a couple of weeks ago I've been trying to figure out a way to get into Japan, and yesterday I hit the jackpot. Heard Maj. Gen. Pat Casey was on the island, so I went over to Gen. Nold's tent to try to get a line on him. There in a conference with Nold were Casey, Gen. Sverdrup, Gen. Newman, Gen. Farrell and Col. Lane.

Before I could open up on them, they went to work on me trying to persuade me to go to Japan and get the engineering story of the occupation and the bomb damage—they said they would look after my transportation from here, take me around up there, and if could get hold of a camera be sure to bring it along as they wanted some real engineering pictures for their files.

Naturally, I couldn't resist all that pressure, so I agreed to change my itinerary and include Japan. We agreed it would be best for me to wait until the latter part of next week to come in, giving Casey a chance to set up his engineering office and to get established. Besides, my camera is now on the way out here, should arrive any day now, and I want to take it along.

Casey outlined some of his engineering problems, and there will be a peach of a story up there. Also, I have talked with Commodore Bisset about the Seabees going into Japan, and I have a line on what they are to do. Casey will be in charge of all engineering in Japan. He and Jack Sverdrup, Newman and Farrell left early this morning.

We are camped not very far from Kadena Airport, and from 3 a.m. on this morning the skies over our heads have been filled with C54's heading for Tokyo with airborne troops and the official surrender parties. Yesterday there were 250 C54's parked at Kadena alone, more at other fields.

I am with Commodore Bisset's headquarters outfit. He has been in charge of all construction on the island, though there are more Army Engineer troops here than Seabees. The Army construction forces are headed up by Col. Rosenberg, who is deputy commander of construction troops under Bisset. His outfit is camped about 300 yds. away. His operations officer is Lt. Col. Herbert Zirschky, of Cook-O'Brien Construction Co., KC Mo., and an old friend of mine.

Just finished a general round-up story on Okinawa construction, one of the biggest jobs of forward base construction in the war. It is now being reviewed by the top hats, and will go to censorship today, I hope.

Other stories will be forthcoming on special projects here. I know that war construction has lost interest to some extent, but there are some interesting jobs going on here that deserve attention in war or peace. **Diking off a sec**tion of the ocean to expose the ocean floor for fill and surfacing material for Naha airport is one example. Raising and removing 174 sunken Jap ships from narrow Naha harbor without adequate crane equipment is another. Building a big airstrip on rice paddy muck is a third.

Life here isn't too rugged. I'm quartered in a floored tent with three others. Mess is fair, much better than army grub, I've found out in my travels around the island. We have a small officers' club in a Jap command post dugout (it made a good air raid shelter) where beer is plentiful but liquor is closely rationed. Movies every other night provide some diversion—**we see** them in an outdoor theatre, and it usually rains, but the films are only 16 mm. and most military recreation films are now 35 mm.

Spent an interesting day on Ie Shima recently. The army is improving and rebuilding the old Jap airport over there. I saw the monument built by the engineers in memory of Ernie Pyle, erected on the spot where he was killed. They got a few sacks of cement from somewhere, cracked aggregate by hand for concrete, and made the plaques and lettering out of scrap stainless steel and brass shell cases. It is a beautiful thing.

One of the most interesting sights I have seen is a group of Jap-made LeTourneau scrapers. They are a faithful reproduction in design—probably made from a captured piece—but the workmanship and welding are awful. There were some other pieces of Jap equipment nearby, but I wasn't interested because that particular field hasn't been cleared of Jap mines.

There are several thousand Japs still at large. I got sniped at once by one shot—which is my sole experience under fire. Those Japs are rotten shots.

Rich.

MEN AT WORK

BRIG. GEN. WILLIAM E. FARTHING (left), Commanding General of Pacific Overseas Air Technical Service Command, Oakland, Calif., goes over the plans for $2,750,000 of new construction at the POATSC Alameda depot with BRIG. GEN. PHILIP G. BURTON, Pacific Division Engineer and Ninth Service Command Engineer; COL. KENNETH M. MOORE, San Francisco District Engineer, at right.

One of H. IRVING SKILTON'S first jobs when he joined the Hartford, Conn., engineering department was to help install street car rails. Recently he celebrated his 35th anniversary with the department by supervising the removal of those same rails, now useless because of the city-wide use of buses.

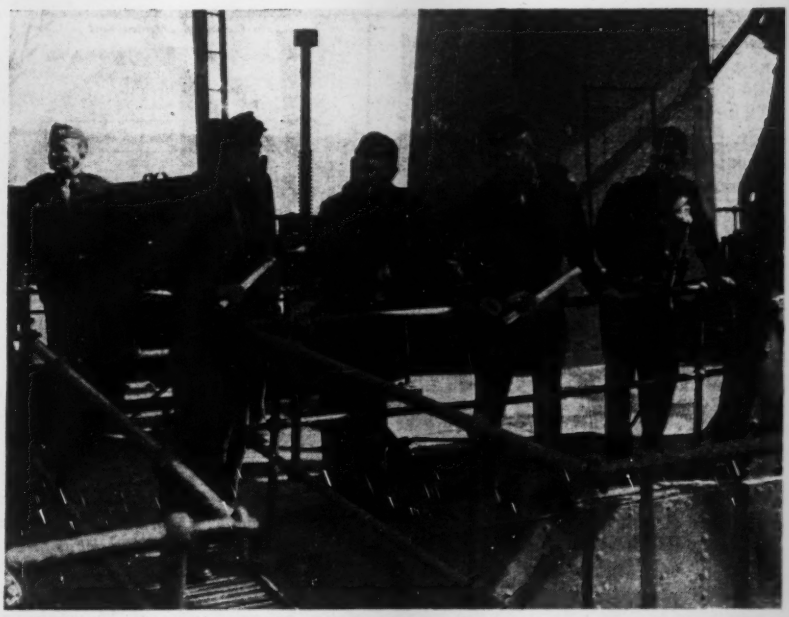
JOHN W. OEHMANN (left), who retired in November, 1943, from the Corps of Engineers and is now serving as director of inspection for the District of Columbia, chats with LAWRENCE CHANDLER, rept. in District of Columbia for the A.S.C.E.

Designing of North Dakota's bridges and maintaining her highways keep these two engineers busy. They are: CLIFFORD JOHNSON (left), bridge engineer and RAY ROBINSON, maintenance engineer, both of the State Highway Department at Bismarck.

Liaison representative in Washington, D. C. for the branch of design and construction, FREDERICK E. WILHELM is soon to complete 15 years with the Bureau of Reclamation. He had a leading part in preparing plans for Boulder Dam and other reclamation projects. Before coming to Washington in January 1944 to take his present position he was in charge of coordinating the bureau's activities in the Denver office.

Key men engaged in a three-million dollar riprap installation project now under way at Kingsley Dam near Ogallala, Neb., are, left to right: RALPH SAATHOFF, superintendent and RAY SMITH, field office manager, of Tobin Quarries, contractor, Kansas City, Mo., and E. J. MECKE, project engineer, The Central Nebraska Public Power and Irrigation District.

HOWARD E. ROBBINS, with the Bureau of Reclamation since 1916, is now construction engineer on the Altus project in Oklahoma, which will be the Bureau's first development to go in operation in Oklahoma. Mr. Robbins has worked on the Grand Valley project in Colorado, the King Hill work in Idaho, the Klamath project in Oregon, the Kendrick development in Wyoming, and the Salt River project in Arizona.



MAJ. GEN. HARRY J. VAUGHN inspects dredging operations in the port of Bremerhaven. This port will be used by American ships and also the former German liner "Europa" when she is refitted and ready to sail as an allied troop transport. (L. to R.) MAJ. WILLIAM E. MILLER, Floral Park, Long Island, N. Y.; General Vaughn, CG. Breman Port Command, of Philadelphia, Pa.; MAJ. CHARLES V. LAMBE, Chicago, Ill., and CAPT. MYRON HAMMOND, the General's aide. In the left background is Capt. WALTER J. RUSSELL, New York City.

ENGINEERING SCHOOL NEWS

R. P. I. to work with industry to replenish technicians—Yale awards ten graduate fellowships in traffic engineering

Rensselaer Polytechnic Institute, Troy, N. Y., has announced a cooperative plan with industry to aid in replenishing the supply of scientific and technological personnel, critically diminished by the war.

The General Electric Co. will train eighty men at a time as its share in the program. Other nationally known companies are also arranging to take part, according to President Livingston W. Houston, of RPI.

"In other great countries," the announcement said, "the supply of technological and scientific personnel is as large as ever, or perhaps larger. Those countries conserved such personnel and continued their training. In the United States such training practically ceased.

"The United States finds itself short approximately 150,000 engineers who would have been graduated during the war period under normal conditions, not to mention war casualties. If these men had been trained, they could aid tremendously now in adapting technological advances coming out of the war to peacetime production in industries.

"The shortage is proportionately even more acute in the number holding master's and doctor's degrees, upon whose research and creativeness we depend most to keep us ahead of or abreast of other countries."

The RPI plan will get under way Nov. 1. While studying various branches of engineering, physics, and chemistry, students will spend about thirty per cent of their time in shops or laboratories of the industries, for which they will receive wages.

Awards of ten graduate fellowships in traffic engineering have been announced by Yale University. They provide $1400 each and enable recipients to engage in a full academic year in graduate study in traffic engineering at the Yale Bureau of Highway Traffic. Scholarships providing for the payment of tuition fees were awarded to an additional seven men.

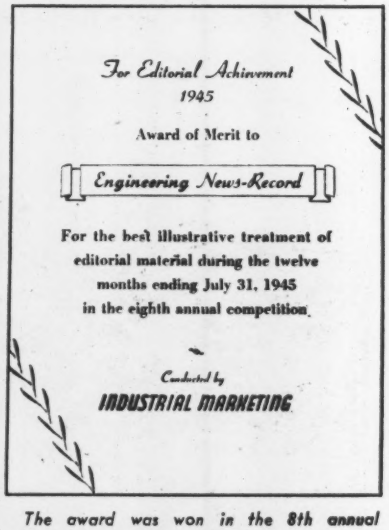
The ten fellowships were made possible through a grant to the Bureau of Highway Traffic by the Automotive Safety Foundation. Awards were based upon educational and experience records of candidates. Preference was given to those now employed in street and highway engineering.

The University of Michigan School of Public Health is offering an "inservice" training course in environmental controls for industrial processes, with special reference to metal working industries. It will be held Oct. 2, 3 and 4.

J. O. Osterberg has been appointed assistant professor of civil engineering at the Technological Institute, Northwestern University, Evanston, Ill., effective this month. Dr. Osterberg retains his position as research engineer for the committee on sampling and testing, Soil Mechanics and Foundations Division, American Society of Civil Engineers, a position which he has held since 1943. His time will be divided between teaching and research for the committee.

News-Record wins national editorial award

This week, Engineering News-Record was presented with the "Merit Award", shown below, given for the best illustrative treatment of editorial material during the year ended July 31, 1945.


For Editorial Achievement
1945
Award of Merit to
Engineering News-Record
For the best illustrative treatment of editorial material during the twelve months ending July 31, 1945 in the eighth annual competition
Conducted by
INDUSTRIAL MARKETING

The award was won in the 8th annual editorial competition, sponsored by "Industrial Marketing". Business and technical magazines entered some 419 exhibits.

The award was based on E. R. Denmark's (News-Record assistant editor) handling of Waldo Bowman's series of 17 articles on American military engineering in Europe, which were published between January and July, 1945.

This is the second time within three years that Engineering News-Record has received an award of excellence for illustrative treatment of its editorial material.

Navy reveals pipeline across Panama isthmus

The Navy Department last week revealed the secret construction and operation of a dual pipeline extending across the Panama isthmus to serve the Pacific Fleet. In operation for nearly two years, although part of the line had been under construction during that time, the pipeline now has a capacity of about 360,000 barrels of gasoline, fuel oil and diesel oil daily.

Although construction and operation of the line was one of the best kept secrets of the war, the work was mentioned, with full censorship approval, in *Engineering News-Record*, Construction Reports Section, in the issue of Nov. 26, 1942, where it was listed as "Fuel Pipeline— Yards & Docks, Navy Dept."; and again on Sept. 9, 1943, as "Canal Zone, Improvements. To Williams Bros. Corp., Tulsa, Okla."

Vice Admiral Ben Moreell, chief of the Bureau of Yards and Docks, said that the original purpose of the pipeline was to serve as a secret supply artery from the Atlantic to the Pacific in case the Panama Canal were damaged by enemy action. Originally a single line, the pipeline was later made into a dual system, this latter work now being 95 percent completed. The double line consists of two 20-in. fuel oil lines, with a capacity of 265,000 bbl. per day; one 12-in. gasoline line, with a capacity of 60,000 bbl., and one 10-in. diesel oil line with a capacity of 47,000 bbl. It runs about 46 miles between Cristobal and Balboa, C. Z.

The total cost of about $20,000,000 includes terminal facilities and piers.

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Henry G. Acres dies; hydro-electric engineer

Henry Girdlestone Acres, 65, St. Catharines, Ont., one of Canada's leading hydro-electric engineers, died in Toronto on Sept. 4. A graduate of the University of Toronto, Mr. Acres gained prominence through his work in designing and supervising the Chippawa-Queenston development of the Ontario Hydro-Electric Power Commission and the Shipshaw development of the Aluminum Co. of Canada at Arvida, Que. The 1,200,000-horsepower Shipshaw project, largest localized power development in the world, was opened in November 1942. As assistant mechanical engineer of the Canadian Niagara Power Co. in 1905, Mr. Acres placed in operation the first 10,000-hp. turbine ever built. He was also in charge in 1907 of constructing the first 110,000-volt transmission line ever built.

States push completion of road plans as WPB construction bans are lifted

Huge new highway construction programs in most states rushed toward completion as official end of war emergency impends

Following hard on the heels of an announcement last week (*ENR* Sept. 6, p. 275) that the War Production Board would remove all controls on highway construction, the nation's state highway departments this week prepared to throw their postwar construction programs into high gear.

Officials of the eleven western states prepared for immediate action to take advantage of $83,855,000 appropriated under the Highway Act of 1944 to become available during the first postwar year after Congress decides that the war emergency program is over. State treasuries are bulging with accumulated tax monies to supplement the federal grant.

During the war, work on western highways has been limited to military necessities. Present plans range from remote farm-to-market roads to wide multi-lane super-highways. Many county and city governments are ready to launch repair and construction programs in addition to the state work.

Charles H. Purcell, California's director of public works, announced his department is ready to launch a highway program that will total $79,000,000 in engineering and construction costs. The California department plans to let contracts at the rate of $2,000,000 a week on major projects that will add 650 miles to the state's 1,620-mile interstate highway system. Federal funds earmarked for California amount to $22,303,000 for the first postwar year.

In Oregon, State Highway Engineer R. H. Baldock has announced that 80 percent of his state's planning is completed, taking advantage of $7,084,000 of federal appropriations for road building.

Arizona, with plans to spend over $100,000,000 in the next ten years for highways, will be allotted $5,728,000 for its first year. The state's program includes three interregional routes.

Montana, with $6,000,000 in construction and repair projects ready for bids in addition to its participation in the federal fund matching program, has an additional $46,000,000 program ready to go, State Engineer Howard W. Holmes said.

Governor Lester C. Hunt, of Wyoming, predicted that his state will get a $5,000,000 federal-state cooperative highway program going within sixty days of the end of the emergency. In addition, the state plans to spend $8,000,000 on a 700-mile county road improvement project.

In Utah a $5,000,000 program for construction of primary and secondary roads has been announced.

Other developments included:

James A. Anderson, Virginia State Highway Commissioner, said efforts are to be made as soon as possible to begin work on major road projects in each of the eight highway districts. Despite the uncertainties of winter weather, the state will soon return to spending more than a million dollars monthly for highway construction, Anderson said.

Preliminary plans for launching a $75,000,000 three-year postwar highway construction program were mapped by the North Carolina Highway & Public Works Commission, despite the possibility that a shortage of engineers might handicap the program for six months after it is launched. W. Vance Baise, chief engineer, said that the state's work would require at least three hundred engineers during the first six months of the program, and added that the program has now fewer engineers than it had before the war started. The State Society of Professional Engineers and all its branches have been requested to aid the program.

At Tallahassee, Florida, State Highway Director F. Elgin Bayless announced an $18,000,000-a-year highway construction program was almost ready for operation. Bayless said the program will result in the improvement or construction of between 6,000 and 7,000 miles of road in Florida.

The Texas State Highway Department meanwhile designated a route for the proposed East-West interregional highway through Dallas, to connect various sections of the city with a through route. The plan was accepted by the City Council, thus ending a deadlock of several months resulting from controversy between the Highway Department and the city over location of the route. The agreed upon compromise route will be the basis for all layouts of buildings and streets in the Dallas master plan. The proposed highway will be 160 ft. wide and will be integrated with all roads and highways now existing in the city.

JOBS OF THE WEEK

APARTMENT, New York, N. Y.

Tishman Realty & Construction Co., New York, N. Y., will construct an 18-story apartment by own forces. The cost will be $2,200,000.

WATER SUPPLY AQUEDUCT, San Francisco, Calif.

Bureau of Yards & Docks, Navy Department, Arlington, Va., awarded a contract for earthwork, pipe line, and structures for San Diego Aqueduct to Guy F. Atkinson Co., Long Beach, at $1,164,885.

RESIDENCES, Los Angeles, Calif.

R. S. Diller, Los Angeles, will construct 850 dwellings, by his own forces. The estimated cost is $6,000,000.

DEPARTMENT STORE, Minneapolis, Minn.

C. F. Haglin & Sons Co., Minneapolis, Minn., has been awarded a contract for altering and constructing additions for department store for L. S. Donaldson Co., Minneapolis, at an estimated cost of $2,500,000. Larson & McLaren, Minneapolis, are the architects.

VISCOSE RAYON PLANT, Sao Paulo, Brazil

Companhia Nitro Quimica, Sao Paulo, has awarded a contract for the design and construction of a viscose rayon plant to Oscar Kohorn & Co., Ltd., New York, N. Y. The estimated cost with equipment is $18,000,000.

ROADS, Vera Cruz, Mexico

State of Vera Cruz, Jalapa, has a 10-year program to construct and repair roads, by its own forces. The estimated cost is $10,000,000.

FACTORY, Chicago, Ill.

Welso Construction Co., Chicago, has been awarded a contract for a 1-story, 300x700-ft. factory for Harlich Manufacturing Co., Chicago. The estimated cost with equipment is $2,000,000. A. Epstein, Chicago is the architect.

Note—Additional bidding and contract news on many projects large and small, including the above items, appear in the Construction News section beginning on page 17.

OBITUARY

Paul Philippe Cret, 68, internationally known architect died in Philadelphia, Pa., Sept. 8. Born in Lyons, France, Dr. Cret was graduated from the Ecole des Beaux Arts, Paris, in 1903. A veteran of the French Army in the first World War, he served for several years as consulting architect to the American Battle Monuments Commission, and designed war memorials at Varennes, Chateau-Thierry, Chamery, Fismes, Bellicourt and the cemetery of Waereghem. After coming to America, he became professor of design at the University of Pennsylvania, serving until 1937. Dr. Cret won the Philadelphia Bok Award in 1931 for his work on the Benjamin Franklin Parkway, the Rodin Museum, Rittenhouse Square, and the Delaware River Bridge.

D. S. Reichard, 37, highway engineer for the Public Roads Administration was drowned Sept. 6 in Belmont Lake, Ontario, while on vacation. He started as a highway engineer for the Public Roads Administration in 1941 and latterly has been employed in the research department at Washington, D. C.

Aime Collet, civil engineer and president of Collet Freres Ltd., general contractors, Montreal, Que., died Aug. 31. Among the many structures erected under his supervision was the $1,000,000 French Embassy at Ottawa.

Lionel R. Viterbo, St. Louis, Mo., consulting and structural engineer, and a member of the engineering firm of Brussel and Viterbo, died Aug. 16.

Lawrence Earl Davenport, 56, East St. Louis, Ill., director of the St. Clair County Housing Authority, died Aug. 22. He was a civil engineer and an authority on local improvement laws.

James Dodgson Shields, 75, retired engineer of sewage and drainage for Toronto, Ont., died Aug. 29. A native of Toronto, and a graduate of the old School of Practical Science of the University of Toronto, Mr. Shields joined the city engineering staff shortly after graduation and remained throughout his professional career.

Charles Hill Turner, 76, a construction contractor in Pensacola, Fla., for 52 years, died Aug. 27.

Edwin J. Fitzgerald, 52, city engineer of Pekin, Ill., for a number of years and previously county surveyor of Tazewell County, Ill., died Aug. 27. He was a graduate of the engineering department, Marquette University, Milwaukee, Wis.

Lieut. Col. Frederick G. Saint, a civil engineering graduate of Princeton University, died in the Philippines last month. He was a son of G. A. Saint, resident engineer for the Chicago & North Western Railway Co., in Chicago.

Archie Borland, a member of the general contracting firm of Bates & Borland, which built the University of California stadium, the Municipal Utility dam at Orinda, the Stockton Street tunnel in San Francisco, etc., died Aug. 26 in Los Angeles, Calif.

R. V. Michaux, 64, of Morganton, N. C., supervisor for the North Carolina Highway Department, died Aug. 27. He formerly was engaged in highway construction work.

George F. Brendlinger, 69, a civil engineer who served in the priorities division of the War Production Board, died Aug. 27 at Wynnewood, Pa. After attending Cornell University, he was engaged in heavy railroad construction with his father, the late P. F. Brendlinger. He also did construction work for E. I. duPont deNemours and Co. and Day and Zimmerman, Inc.

Roland C. Harris, 70, Commissioner of Public Works, Toronto, Ont., died Sept. 2. He was 46 years in the city's service.

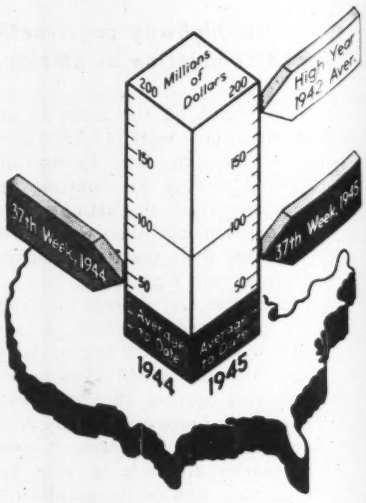
Charles D. Thompson, 84, retired Atlantic City, N. J., contractor and builder, died recently. He had to do with the construction of many of Atlantic City's older buildings, including several hotels.

Howard E. Putnam, 63, civil engineer, with the Southern Natural Gas Co. for the last 20 years, died Aug. 31. Previously he was employed in the land department of the Republic Steel Corp. in the southern district.

George Roderick MacLeod, 73, for 30 years a member of the city engineering staff of Ottawa, Ont., died Aug. 29. He was a graduate of McGill University and a member of the council of the Engineering Institute of Canada.

Frank A. Crosson, 67, construction superintendent for the Great Lakes Dredge and Dock Co., Chicago, for the past 25 years, died Aug. 29 at Sault Ste. Marie, Mich.

CONSTRUCTION ACTIVITY



As Reported This Week to...
Engineering News-Record

CONTRACT VOLUME

Continental U. S. Only (Thousands of Dollars)

	Week of Sept. 13 1945	Cumulative 1945 (37 wk.)	Cumulative 1944 (37 wk.)
Federal	$8,962	$663,385	$868,060
State & Munic.	11,287	236,538	179,389
Total Public	$20,249	$899,923	$1,047,949
Total Private	40,140	452,326	281,532
U. S. Total	**$60,389**	**$1,352,249**	**$1,329,481**

WHERE CONSTRUCTION ACTIVITY ORIGINATED THIS WEEK

Dollar Volume (Thousands)

Type of Work	This Week	Cumulative 1945 (37 wk.)	Cumulative 1944 (37 wk.)
Waterworks	$3,708	$39,153	$22,694
Sewerage	1,905	22,748	22,835
Bridges	570	22,957	10,773
Highways	5,538	155,673	154,636
Earthwork, Waterways	1,102	35,822	48,982
Buildings, Public	4,949	407,943	494,111
Industrial	13,882	287,175	127,249
Commercial	24,000	109,875	113,257
Unclassified	6,635	270,903	334,944

NOTE: Minimum size projects included are: Waterworks and waterway projects, $15,000; other public works, $25,000; industrial buildings, $40,000; other buildings, $150,000.

NEW PRODUCTIVE CAPITAL

	Cumulative 1945 37 wk.	Cumulative 1944 37 wk.
NON-FEDERAL	$560,948	$341,776
Corporate Securities	117,582	94,475
State and Municipal	279,766	106,511
RFC Loans	24,600	57,790
REA Loans	60,000	20,000
Fed. Aid, Highway	79,000	63,000
FEDERAL	$1,049,898	$1,263,800
Total Capital	**$1,610,846**	**$1,605,576**

ENR INDEX NUMBERS

Index Base = 100		1913	1926
Construction Cost	Sept. '45	309.28	148.67
Building Cost	Sept. '45	240.07	129.77
Volume	Aug. '45	119	52